

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

Adherence to the cited legal requirements is sufficient in achieving a low level of risk that is consistent with management performance goals. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

Fermilab's present extensive emergency management system includes hazard assessment, planning, preparedness, and response; an Incident Command System. It is documented in the Fermilab Emergency Plan. When the above standard is approved in the N&S process, internal implementation programs may be modified to be compatible with this standard.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

160. Emergency preparedness - toxicity in smoke or fumes

Focus group

☒ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

29 CFR 1910.38 (evacuation, accountability during emergency)
29 CFR 1910.120 (emergency response)
29 CFR 1910.134 (respirators)
29 CFR 1910.1000 Subpart Z (Protective Exposure Limits)
41 IAC

4. Are there any aspects of these necessary standard(s) which do not add value?

☐ YES ☒ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

Adherence to the cited legal requirements is sufficient in achieving a low level of risk that is consistent with management performance goals. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

Fermilab's present extensive emergency management system includes hazard assessment, planning, preparedness, and response; an Incident Command System. It is documented in the Fermilab Emergency Plan. When the above standard is approved in the N&S process, internal implementation programs may be modified to be compatible with this standard.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

161. Env - general environmental protection planning

Focus group

☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☒ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

NEPA 42 USC 4321 et seq.
40 CFR 1500 - 1508
10 CFR 1021

4. Are there any aspects of these necessary standard(s) which do not add value?

☐ YES ☒ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

Continuation of the current program will provide an appropriate level of protection at an acceptable cost. The indicated statute and regulations are adequate to provide a planning program that assures the appropriate level of consideration for environmental impacts early in the project planning cycle.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

When the above standard is approved in the N&S process, internal implementation programs will be modified to be consistent with the standard.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

163. Occupational safety administrative requirements

Focus group

☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☒ Management & Oversight ☐ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

5(a)(1) of the OSH Act (General duty clause)
29 CFR 1903.2 (Posting of notice...)
29 CFR 1903.13 (Imminent danger)
29 CFR 1904 (Recordkeeping and reporting occupational injuries and illnesses)
29 CFR 1910.20 (Access to employee exposure and medical records)
29 CFR 1977.4 (Persons prohibited from discriminating)
29 CFR 1977.12 (Exercise of any right afforded by the Act)

4. Are there any aspects of these necessary standard(s) which do not add value?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

At least some of the requirements cited in #3 primarily support external oversight of Fermilab ES&H performance. Therefore, they are not directly useful to Fermilab management in limiting risks to employees. However, they are included here because they are viewed as essential, required components in the overall management of ES&H.

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. These are industrial issues and the solutions chosen are industrial solutions. 5(a)(1) of the OSH Act (General duty clause) permits enforcement against "otherwise unregulated" hazards. 29CFR1903.2 (Posting of notice...) provides employees with info regarding their OSH rights and responsibilities. 29CFR1903.13 (Imminent danger) permits enforcement against imminent hazards. 29CFR1904 (Recordkeeping and reporting occupational injuries and illnesses) defines occupational injury/illness recording and reporting requirements. 29CFR1910.20 (Access to employee exposure and medical records) defines employee access and retention requirements for exposure and medical records. 29CFR1977.4 (Persons prohibited from discriminating) prohibits discrimination against employees presenting safety concerns. 29CFR1977.12 (Exercise of any right afforded by the Act) allows employees to refuse truly dangerous work assignments.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

Fermilab has been subject to the requirements in #3 since DOE's adoption of OSHA standards and has implemented successful and cost-effective programs to assure acceptable performance.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

164. Occurrence Investigation and Reporting

Focus group

☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☒ Management & Oversight ☐ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☐ YES ☒ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

4. Are there any aspects of these necessary standard(s) which do not add value?

☐ YES ☐ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☐ YES ☒ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☒ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☒ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

Fermilab ES&H Manual Chapter 3050 constitutes an internal standard on occurrence investigation and reporting based upon DOE 5000.3B. This standard defines the areas for which occurrence reporting is done including: 1) when laws or regulations require reporting of incidents and occurrences outside the scope of normal operations, 2) when there is adverse public interest in an occurrence, 3) when a serious degradation in facility condition or personnel safety occurs, and 4) when the information is deemed to be, in the judgement of the Laboratory or the Contracting Officer, of significant value to other facilities in the DOE complex. Of necessity, occurrence reporting involves investigation of significant accidents, development, and tracking of related corrective actions.

12. Describe how the levels of risk and cost are consistent with management performance goals.

It is recognized that certain occurrences, as a management practice, should be reported to URA corporate headquarters and to DOE and that in some cases this information is potentially useful to similar facilities. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

Fermilab has implemented successful and cost-effective programs to assure acceptable performance in the area of occurrence reporting.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

165. Radiation - radiological emergency response (see 154.)

Focus group

☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☐ Management & Oversight ☒ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

10 CFR 835.1301
10 CFR 835.1302 (covers records and dose limits for), for more see Emerg. Prep. 154

4. Are there any aspects of these necessary standard(s) which do not add value?

☐ YES ☒ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

10 CFR 835.1301 and .1302 directly address radiation emergencies. These requirements along with those for general emergency response standards (see emergency preparedness recommended standards) and general exposure control techniques covered elsewhere in 10 CFR 835 adequately address radiation emergencies. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

The program is implemented in the Fermilab Radiological control Manual.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

166. Radiation - radiological training

Focus group

☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☐ Management & Oversight ☒ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

10 CFR 835.901-903

4. Are there any aspects of these necessary standard(s) which do not add value?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

The present requirements of 10 CFR 835 exclude from validity at DOE facilities all radiological worker worker training received at non- DOE-regulated facilities. Also, the requirements for the validation of radiological training only by written examination is excessive and adds limited value not matched to risk or cost. The management performance objectives could be met more effectively with an exception to these provisions of 10 CFR 835.

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

With the exemption requested above, the training program in this area is sufficient to meet performance goals. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution. These training requirements are largely consistent with those imposed on NRC licensees.

13. Pick the basic implementing assumption from the list.

☒ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☐ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

The program is implemented in the Fermilab Radiological Control Manual. A major positive impact in cost-effectiveness would be achieved if the above proposed exemption request were approved. This major positive impact is also a result of basing training on worker hazards at an accelerator rather than DOE training material. When the above standard is approved in the N&S process, internal implementation programs may be modified to be compatible with this standard.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

167. Radiation - monitoring and measurement of radiation

Focus group

☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☐ Management & Oversight ☒ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

10 CFR 835.401-404
10 CFR 835.1101

4. Are there any aspects of these necessary standard(s) which do not add value?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

Some technical and administrative provisions of the requirement to meet the Department of Energy Laboratory Accreditation Program [835.402(b)] do not add value. The management performance objectives could be met more effectively with an exemption to this provision of 10 CFR 835. The requirements of the National Voluntary Laboratory Accreditation Program (NVLAP) would provide adequate dosimetry and documentation for Fermilab operations. This would reduce cost by allowing the use of radiation dosimetry services provided by commercial vendors who meet the NVLAP standards and encourage more competitive bidding.

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

The performance requirements are adequately covered by compliance with the cited regulation. ANSI N323, N42.17, N322, N13.5, N319, N543, and N13.15 are already presently used as guidance documents in Fermilab's implementation of the regulation. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☒ Minor positive impact ☐ Major negative impact
☐ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

Adopting the NVLAP standard on personnel dosimetry will result in minor cost savings. The present requirements are implemented by Fermilab ES&H Section through Specific Quality Implementation Plan RPS.1. If the above exemption is approved, internal implementation programs may be modified to be compatible with revised requirements.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s) Issue origin ☐ Hazard analysis ☒ Identification Team

168. Radiation - record keeping in occupational radiation protection

Focus group ☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☐ Management & Oversight ☒ Radiation Protection

2. Is there a necessary standard which applies to this issue? ☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

10 CFR 835.4
10 CFR 835.204
10 CFR 835.701-704
10 CFR 835.801
10 CFR 835.1101
10 CFR 835.1301
Privacy Act of 1974

4. Are there any aspects of these necessary standard(s) which do not add value? ☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

1) The requirement in 10 CFR 835.702(c) to record cumulative dose equivalents since January 1989 adds no value but increases costs due to the need to collect such data. General industry practice is to collect this data for the worker's lifetime and does not use the arbitrary date of January 1989 in this manner. An exemption request should be submitted to record only total cumulative lifetime dose equivalent.

2) The regulation of 10 CFR 835.1101. To create detailed records of removal of items from Contamination Areas adds no value because such records become irrelevant in a very short period of time but take extensive resources to collect. An exemption request should be submitted and approved to allow for a more reasonable and cost-effective protocol (see issue 133).

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? ☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue? ☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

The recordkeeping requirements as specified above achieve management performance goals. The content of DOE Orders 1324.1A, .2A, and .5A have been used as guidance to develop Fermilab's present records management programs. With the exception of the particular requirements stated in box 5, these recordkeeping requirements are quite similar to those employed by general industry in the recording of radiation protection information. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☒ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☐ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

This program is presently implemented by the Fermilab Radiological Control Manual. The present program would be more cost effective if the proposed exemptions to requirements to 10 CFR 835 were made as above. This is particularly true if most of the content of DOE Orders 5000.3B and DOE 5484.1 are not adopted as Necessary and Sufficient Standards. When the above standard is approved in the N&S process, internal implementation programs may be modified to be compatible with this standard.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s) **Issue origin** ☐ Hazard analysis ☒ Identification Team

169. Radiation - exposure control

Focus group ☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☐ Management & Oversight ☒ Radiation Protection

2. Is there a necessary standard which applies to this issue? ☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

10 CFR 835.101(c)
10 CFR 835.202-203
10 CFR 835.206-208
10 CFR 835.1001-1003
10 CFR 835.1302

4. Are there any aspects of these necessary standard(s) which do not add value? ☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

The requirement in 10 CFR 835.101(c) to develop ALARA plans does not add value but adds significant cost. The "shalls" in 10 CFR 835.1001, and .1002 should be replaced with "shoulds" to be more consistent with the nature and goals of the ALARA process as promulgated by such bodies as ICRP and NCRP. An exemption request should be submitted along these lines.

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? ☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue? ☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

Meeting the requirements of the regulation adequately addresses this issue. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

The program is implemented in the Fermilab Radiological Control Manual. When the above standard is approved in the N&S process, internal implementation programs may be modified to be compatible with this standard.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

170. Radiation - QA in occupational radiation protection

Focus group

☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☐ Management & Oversight ☒ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

10 CFR 835.102

4. Are there any aspects of these necessary standard(s) which do not add value?

☐ YES ☒ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☒ YES ☐ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

The cited regulation along with the Fermilab Self-Assessment Program Plan adequately address this issue. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

This program is implemented by means of the Fermilab Radiological Control Manual.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

171. safety analysis and documentation

Focus group

☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☒ Management & Oversight ☐ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☐ YES ☒ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

4. Are there any aspects of these necessary standard(s) which do not add value?

☐ YES ☐ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☐ YES ☒ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☐ YES ☒ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☐ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☒ YES ☐ NO

11. Describe nature and status of internal sufficient standard.

Fermilab ES&H Manual Chapter 2010 constitutes an internal standard on safety analysis.

12. Describe how the levels of risk and cost are consistent with management performance goals.

The internal standard requires safety analysis and documentation at a level consistent with the goal that the hazards of laboratory activities will be assessed to the level necessary to assure achievement of management performance goals, one of which is to be in the upper quartile of accident/incident experience for comparable industrial situations.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

Fermilab has implemented successful and cost-effective programs to assure acceptable performance in the area of safety analysis. The scope and level of detail for safety analyses are determined on a case by case basis using a graded approach by the Director or designee. The specific approval mechanisms for all such documents are also determined by the Laboratory Director on a case by case basis.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s)

Issue origin ☐ Hazard analysis ☒ Identification Team

172. Fire - emergency responder safety

Focus group

☐ Emergency Management ☒ Fire Protection ☐ Occupational Safety
☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection

2. Is there a necessary standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 6.

3. Necessary standard(s)

29 CFR 1910.120 (emergency response)
29 CFR 1910.135 (occupational head protection)
29 CFR 1910.136 (occupational foot protection)
29 CFR 1910.156 (fire brigades)
41 IAC
Illinois Health and Safety Act

4. Are there any aspects of these necessary standard(s) which do not add value?

☐ YES ☒ NO

If yes, continue; otherwise skip to 6.

5. Description of non-value added aspects of necessary standard(s).

6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards?

☐ YES ☒ NO

If no continue; otherwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

☒ YES ☐ NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

8. External sufficient standard citation

NFPA National Fire Codes (NFPA standards list)

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?

☒ YES ☐ NO

If no continue; otherwise skip to 12.

10. Is an internal standard required to attain a level of risk consistent with management performance goals?

☐ YES ☒ NO

11. Describe nature and status of internal sufficient standard.

12. Describe how the levels of risk and cost are consistent with management performance goals.

Adherence to the cited legal requirements is sufficient in achieving a low level of risk that is consistent with management performance goals. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.

13. Pick the basic implementing assumption from the list.

☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impact
☒ No net impact

14. Describe the nature and status of implementation including cost-effectiveness.

Fermilab's present emergency response force (Fire Department) is currently implementing the above standards.

**FERMILAB N&S STANDARDS PILOT
TABLE I - ISSUES AND STANDARDS SPREADSHEET**

ISSUES		STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
Issue	Requirement	External	Internal	Issue Origin	FG	
001. Bio - animals 004. Bio - insects 005. Bio - plants	29 CFR 1926.21(b)(4) 29 CFR 1910.132			OS	HA	
002. Bio - bacteria (water) 151. Thermal - wet work environments	77 IAC 900 29 CFR 1910.141 29 CFR 1926.27 29 CFR 1926.51			OS	HA	
003. Bio - bloodborne pathogens	29 CFR 1910.1030			OS	HA	
006. Chem - acids, solvents, toxic agents and haz. liquids 009. Chem - chemical exposures exceeding PEL 013. Chem - nuisance dusts 016. Chem - use of toxic materials	29 CFR 1910.1200 29 CFR 1910.1000 40 CFR 355 40 CFR 370 40 CFR 372			OS	HA	
007. Chem - carbon monoxide	29 CFR 1910.1200 29 CFR 1910.146 29 CFR 1910.1000			OS	HA	
008. Chem - carcinogens	29 CFR 1910.1000-1200			OS	HA	
010. Chem - chemical reactions	29 CFR 1910.1200 40 CFR 724.277			OS	HA	
011. Chem - cutting and burning 015. Chem - toxicity in smoke or fumes 017. Chem - welding fumes	29 CFR 1910.1200 29 CFR 1910.1000 29 CFR 1910.146 29 CFR 1910.252-257			OS	HA	
012. Chem - heavy metals such as lead	29 CFR 1910.1200 29 CFR 1910.1000 29 CFR 1910.1018 (inorganic arsenic) 29 CFR 1910.1025 (lead) 29 CFR 1926.62 (lead)			OS	HA	
014. Chem - pesticides 055. Env - pesticide application and use	FIFRA (7 USC 136 et seq.) 40 CFR Subchapter E Illinois Pesticide Act, IRS Ch. 5, para. 801 et seq.; 45 ILCS 60-1 Structural Pesticide Act, IRS Ch. 111 1/2, para. 2201 - 2225 29 CFR 1910.1200 29 CFR 1910.1000 35 IAC 302.302 35 IAC 602.110 35 IAC 652 77 IAC 830			EP OS	HA	
018. Construction - compressed gasses	29 CFR 1926.350-352			OS	HA	
019. Construction - demolition	29 CFR 1926.850 29 CFR 1926.58 (asbestos)			OS	HA	
020. Construction - dewatering hazard	29 CFR 1926.651(h)			OS	HA	
021. Construction - earth cave-in and collapse	29 CFR 1926.651-652			OS	HA	
022. Construction - earth moving equipment	29 CFR 1926.600-602			OS	HA	
024. Construction - earth clearing	29 CFR 1926.604			OS	HA	
025. Construction - fall hazards	29 CFR 1926.500-503 29 CFR 1926.104			OS	HA	

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
027. Construction - hand tools	29 CFR 1926.300-301 29 CFR 1926.303 29 CFR 1926.305 29 CFR 1910.242			OS	HA
028. Construction - heavy equipment	29 CFR 1926.550 29 CFR 1926.600-602 29 CFR 1926.250 29 CFR 1926.251			OS	HA
030. Construction - ladder	29 CFR 1926.105 29 CFR 1926.1050-1053 29 CFR 1926.1060 29 CFR 1926.603 29 CFR 1926.550 29 CFR 1926.851 29 CFR 1926.951 29 CFR 1926.605 29 CFR 1926.451 29 CFR 1910.25-27 29 CFR 1910.31 29 CFR 1910.179 29 CFR 1910.333			OS	HA
032. Construction - materials handling	29 CFR 1926.250 29 CFR 1926.602			OS	HA
033. Construction - possibility of hitting utilities	29 CFR 1926.651(b)			OS	HA
034. Construction - scaffolding	29 CFR 1926.451			OS	HA
035. Construction - transportation 128. Other personnel hazards - traffic hazards	29 CFR 1926.600-601 29 CFR 1926.200-202 Illinois Compiled Statutes (ICS) Chapter 625 (State vehicle code)			OS	HA
036. Electricity - battery	29 CFR 1910.305(j)(7) (explosion prevention)			OS	HA
037. Electricity - exposed conductors / >50 volts 038. Electricity - high voltage	29 CFR 1910.147 (LOTO) 29 CFR 1910.332-333		Fermilab ES&H Manual Chapters 5040-5042, and 5044. In general, OSHA electrical safety standards are not a good match for electrical hazards in a research environment. As such Fermilab has developed internal standards which appear as chapters in its ES&H Manual: 5040 - Defines basic policies and responsibilities. TA provides practical guidance and interpretations of external standards. 5041 - Requirements for working on equipment that goes beyond OSHA. Includes LOTO and work on energized equipment. 5042 - Guidance for work on premises wiring including work permit for energized systems. 5044 - Guidance for exposed conductors in accelerator enclosures.	OS	HA IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
039. Electricity - high power 041. Electricity - high current conductors / <50 volts 042. Electricity - stored energy / capacitors 043. Electricity - stored energy / inductors	29 CFR 1910.147 (LOTO) 29 CFR 1910.332-333		Fermilab ES&H Manual Chapters 5040-5042, 5044, and 5046. In general, OSHA electrical safety standards are not a good match for electrical hazards in a research environment. As such Fermilab has developed internal standards which appear as chapters in its ES&H Manual: 5040 - Defines basic policies and responsibilities. TA provides practical guidance and interpretations of external standards. 5041 - Requirements for working on equipment that goes beyond OSHA. Includes LOTO and work on energized equipment. 5042 - Guidance for work on premises wiring including work permit for energized systems. 5044 - Guidance for exposed conductors in accelerator enclosures. 5046 - Guidance for low voltage high current power distribution systems.	OS	HA IT
040. Electricity - lightning	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFE 1910.307(b)(3) (Safe for hazardous [classified] location) 29 CFR 1910.308(e)(3)(i)b (Separation between lead-in and lightning protection conductors) 29 CFR 1910.106(e)(6)(i) (Ignition source for flammable vapors) 29 CFR 1910.106(h)(7)(i)a (Ignition source for flammable vapors) 29 CFR 1926.152(i)(6) (Ignition source for flammable vapors)	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Association National Fire Codes (NFPA Standards List) UL Listing		FP	HA
044. Env - air emissions / nonrad	Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 50 40 CFR 52 Subpart O 40 CFR 58 40 CFR 60-61 40 CFR 63 40 CFR 80 40 CFR 82 40 CFR 88 Subpart C 40 CFR 264-265 35 IAC Subtitle B and permits pursuant			EP	HA
045. Env - air emissions / rad	Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 61 Subpart H 35 IAC Subtitle B and permits pursuant			EP	HA
046. Env - cultural resources	National Historic Preservation Act of 1966 [amended] Archaeological and Historic Preservation Act of 1974 Archaeological Resources Protection Act of 1979 [amended] Native American Graves Protection and Repatriation Act of 1990 36 CFR 65 36 CFR 78-79 36 CFR 800 43 CFR 7			EP	HA

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
047. Env - asbestos	29 CFR 1910.1001 29 CFR 1926.58 TSCA, 15 USC 2601 et seq. 40 CFR 61 Subpart M 40 CFR 763			EP OS	HA
048. Env - drinking water quality	SDWA, 42 USC 300f et seq. 40 CFR 141-142 40 CFR 144 40 CFR 146 40 CFR 147 Subpart O Illinois Ground Water Protection Act, IRS 1989 Chapter 111 1/2 35 IAC Subtitle F Chapter I 77 IAC 890 77 IAC 900 77 IAC 920 77 IAC 925 DuPage County Health Department Private Water Supply Ordinance OH0002-90 Ch. 34 Kane County Ordinance 91-101 Water Well Code	Recommen ded Standards for Water Works, Great Lakes Upper Mississipp i R. Bd. of State Public Health & Environme ntal Managers (1992) Handbook for Sampling & Sample Preservati on of Water and Wastewat er, EPA- 600/4-82- 029		EP	HA
049. Env - endangered species	Endangered Species Act 16 USC 1531 et seq. 50 CFR 17 Illinois Endangered Species Protection Act, IRS 1991, Ch. 8, par. 331 et seq. 17 IAC 525 and permit pursuant			EP	HA
050. Env - groundwater protection	Safe Drinking Water Act, 42 USC Section 300f et seq. 40 CFR 141-142 40 CFR 144 40 CFR 146 40 CFR 147 Subpart O Illinois Ground Water Protection Act, IRS 1989 Chapter 111 1/2 35 IAC Subtitle F, Chapter I; 730 - 732 77 IAC 920 DuPage County Health Department Private Water Supply Ordinance (OH-0002-90, Ch.34, DuPage County Code) Kane County Health Department Ordinance 91-101 Water Well Code			EP	HA
051. Env - hazardous waste	RCRA, 42 USC 6901 et seq. 40 CFR 260- 270 RCRA Part B Permit (Illinois Log #131), including Emergency Contingency plan 29 CFR 1910.120 35 IAC Subtitle G Federal Facility Compliance Act			EP	HA

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP
052. Env - offsite radiation protection / penetrating		DOE Order 5400.5 Derived Concentration Guide Table and dose limits to the public (Chapter 2, section 1; Chapter 3)	EP HA IT
053. Env - ozone depleting substances	Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 82 E.O. 12843		EP HA
054. Env - PCBs	TSCA, 15 USC 2601 et seq. 40 CFR 268 40 CFR 302 40 CFR 761 29 CFR 1910.1000 RCRA Part B permit 35 IAC 728 35 IAC 808-809		EP HA
056. Env - regulated chemical waste / non-hazardous	40 CFR 259 35 IAC 807-810 35 IAC 700 Subpart F E.O. 12580 E.O. 12856 E.O. 12873		EP HA IT
058. Env - sanitary and sewer discharges	Clean Water Act, 33 USC 1251 et seq. 40 CFR 116-117 40 CFR 121-125 (exc. 123) 35 IAC Subtitle C and pre-treatment permits pursuant Batavia Code of Regulations, City Ordinance, Section 8-3-10-3 City Code of Warrenville, IL Title 7, Chapter 4	Standard Methods for the Examination of Water and Wastewater, 18th Ed., APHA (1992) DOE 5400.5 (Chapter 2, Section 3)	EP HA
059. Env - solid waste management units and inactive waste sites	RCRA, 42 USC 6901 et seq. RCRA Part B permit 35 IAC 620 35 IAC 724 35 IAC 815 CERCLA/SARA 42 USC 6901 et seq. 40 CFR 300 40 CFR 302 40 CFR 355 40 CFR 370 40 CFR 372		EP HA

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
060. Env - surface water	Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 -125 (exc. 123) 40 CFR 131 40 CFR 136 40 CFR 230 40 CFR 401 - 403 33 CFR 320 - 323 33 CFR 328 - 330. 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant E.O. 10988 E.O. 10990 10 CFR 1022	Standards and Specificati ons for Soil Erosion and Sediment Control, 10/87, IEPA 87- 102 DOE Order 5400.5 (Ch. 2, sec. 1;Ch. 3)		EP	HA
061. Env - transformer oil / non-PCB	Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 40 CFR 112 40 CFR 300 - 302 29 CFR 1910.106 35 IAC 808 - 809			EP	HA
062. Fire - boiler, heating systems, and (commercial) appliances	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 120 IAC - Boiler and Pressure Vessels 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing		FP	HA
063. Fire - cigarette smoking	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1926 Subpart F - Fire Protection and Prevention EPA Air Quality Stds.			FP	HA
064. Fire - electrical	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart H - Hazardous Materials; 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing	Fermilab ES&H Manual Chapters 5043, Management and use of cable tray systems, and 5046, Low- Voltage, High-Current Power Distribution Systems. These standards require proper installation of cable trays used for electrical conductors and overcurrent protection for all current carrying conductors in high-current, low-voltage power distribution systems. They have been fully implemented and integrated into management and oversight practices.	FP	HA

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP	FP	HA
065. Fire - flammable liquids and gases	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety; 160 IAC - Storage, Transportation, Sale and Use of Gasoline and Volatile Oils: Rules Relating to General Storage 170 IAC - Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances 180 IAC - Storage Transportation, Sale and Use of Volatile Oils 29 IAC - Emergency Services, Disasters, and Civil Defense, Chapter I: Emergency Services and Disaster Agency, Subchapter f: Chemical Safety IL Public Act 84-852, Illinois Chemical Safety Act 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Association National Fire Codes (NFPA Standards List) UL Listing	Fermilab ES&H Manual, Chapter 6020.3, Storage and Use of Flammable Gases at Physics Experiments This standard, which governs use of flammable gases in detectors, provides a graded approach based on the inventory of flammable gas involved. The measures and precautions called out are needed because particle detectors cannot be built to comply with the electrical guidelines from the National Electrical Code, NFPA70, Article 501 for NEC Class 1, Group D, Division 2 Installations. This standard has been fully implemented and integrated into management and oversight practices.	FP	HA
066. Fire - mobile structures	NOTE: There are no specific legal requirements identified as applicable solely to mobile structures. However, the entirety of OSHA and Illinois Law is applicable to the occupancy and specific use of the structure and contents.	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Association National Fire Codes (NFPA Standards List) UL Listing		FP	HA
067. Fire - special hazardous materials	29 IAC - Emergency Services, Disasters, and Civil Defense, Chapter I: Emergency Services and Disaster Agency, Subchapter f: Chemical Safety IL Public Act 84-852, Illinois Chemical Safety Act 29 CFR 1910 Subpart E - Means of Egress; 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart I - Personal Protective Equipment 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart Z - Toxic and Hazardous Substances 41 IAC - Fire Protection 140 IAC - Policy and Procedures Manual for Fire Protection Personnel	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Association National Fire Codes (NFPA Standards List) UL Listing	There is always the possibility of introduction of unique one-of-a-kind materials by a physics experiment in order to achieve its research objectives. By making this entry, Fermilab acknowledges its responsibility to develop adequate internal standards for those cases where consensus external standards are not available or not applicable. Individual hazardous material usages may require specific implementation standards to provide for safe usage; this level of risk acknowledgement is to verify the commitment to do so.	FP	HA IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
067B. Fire - hydrogen targets			Fermilab ES&H Manual Chapter 5032.2, Guidelines For the Design, Fabrication, Testing, Installation, and Operation of LH2 Targets Fermilab has developed these guidelines to address the hazards associated with these targets. The latest version of this document has been in existence and use for over 6 years.	OS	IT
068. Fire - special occupancies / accelerator and beam line enclosures	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical	BOCA National Building Code BOCA Fire Prevention Code NFPA 101 & 101A current editions National Fire Protection Association National Fire Codes (NFPA Standards List) UL Listing	Fermilab ES&H Manual Chapter 5043, Management and use of cable tray systems. This standard requires proper installation of cable trays used for electrical conductors. It has been fully implemented and integrated into management and oversight practices.	FP	HA IT
069. Fire - spontaneous combustion	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1926 Subpart F - Fire Protection and Prevention			FP	HA
070. Fire - stationary combustion engines		NFPA 37: Standards for the Installation and Use of Stationary Combustion Engines and Gas Turbines.		FP	HA
071. Fire - storage of combustibles	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 IAC - Emergency Services, Disasters, and Civil Defense, Chapter I: Emergency Services and Disaster Agency, Subchapter f: Chemical Safety IL Public Act 84-852, Illinois Chemical Safety Act 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart Z - Toxic and Hazardous Substances	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Association National Fire Codes (NFPA Standards List) UL Listing		FP	HA

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
072. Fire - transportation / rail, vehicle, and fueling 077B. HazMat transport - fire/explosion / onsite	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 160 IAC - Storage, Transportation, Sale and Use of Gasoline and Volatile Oils: Rules Relating to General Storage 170 IAC - Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances 180 IAC - Storage Transportation, Sale and Use of Volatile Oils 49 CFR 383.23 Commercial Drivers License 49 CFR 393.95 Emergency Equipment on Vehicles 49 CFR 397.11 Fires 49 CFR 397.13 Smoking 49 CFR 397.15 Fueling 49 CFR 177.848 C (Segregation table for hazardous materials)	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing		FP	HA IT
073. Fire - welding near combustibles 074. Fire - spark producing tools near combustibles	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart Q - Welding, Cutting and Brazing 29 CFR 1926 Subpart F - Fire Protection and Prevention	BOCA Fire Prevention Code NFPA 1: Fire Prevention Code NFPA 51: Standard for the Design and Installation of Oxygen- Fuel Gas Systems for Welding, Cutting, and Allied Processes NFPA 51B: Standard for Fire Protection in Use of Cutting and Welding Processes	Fermilab ES&H Manual Chapter 6020.3, Storage and Use of Flammable Gases at Physics Experiments. This standard calls for a minimum separation between welding, burning, brazing and grinding operations and physics experiment apparatus using flammable gases. If the minimum separation is not practical, the flammable gas inventory must first be removed from the apparatus before operations are permitted. This requirement has been integrated into the welding, burning and brazing permit control process.	FP	HA
075A. HazMat transport - bad road conditions / offsite	49 CFR 392.14 (Hazardous conditions; extreme caution)			OS	HA IT
075B. HazMat transport - bad road conditions / onsite		49 CFR 392.14 (Hazardou s conditions; extreme caution - not required onsite)		OS	HA IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
076A. HazMat transport - emergency response and spill clean up / offsite 081A. HazMat transport - spills and chemical releases /offsite	49 CFR 172.600G (Emergency response information) 49 CFR 171.15 (Immediate notice of certain hazardous material incidents) 40 CFR 112 (Oil pollution prevention) 40 CFR 761 (PCB spill cleanup policy) 40 CFR 302 (Designation, reportable quantities & notification) 40 CFR 355 (Emergency planning & notification)			EP OS	HA IT
076B. HazMat transport - emergency response and spill cleanup / onsite 081B. HazMat transport - spills and chemical Releases / onsite	29 CFR 1910.120 (Hazardous waste operations & emergency response) 40 CFR 112 (Oil pollution prevention) 40 CFR 761 (PCB spill cleanup policy) 40 CFR 302 (Designation, reportable quantities & notification) 40 CFR 355 (Emergency planning & notification)			EP OS	HA IT
077A. HazMat transport - fire and explosion / offsite	49 CFR 171.15 (Immediate notification of certain hazardous materials incidents) 49 CFR 172.600G (Emergency response information)			OS	HA IT
078A. HazMat transport - loading and unloading / offsite	49 CFR 177.834B (Loading & unloading) 29 CFR 1910.176 (Handling materials - general) 29 CFR 1910.178 (Powered industrial trucks)			OS	IT HA
078B. HazMat transport - loading and unloading / onsite 095B. Material handling - transportation / onsite	29 CFR 1910.176 (Handling materials - general) 29 CFR 1910.178 (Powered industrial trucks)	49 CFR 177.848C (Segregation table for hazardous materials - not required onsite)		OS	HA IT
079A. HazMat transport - packaging hazardous materials / offsite	49 CFR 178.500L Subchapter C (Specifications for packagings)			OS	HA IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
079B. HazMat transport - packaging hazardous materials / onsite		49 CFR 173.24(e)(1-2) (Chemical compatibility for single packaging s) 49 CFR 173.24(e)(4)(i-iii) (Chemical compatibility for multiple packaging s) 49 CFR 173.24a(a)(1) (Positioning of inner receptacle s) 49 CFR 173.24a(a)(3-4) (Packing for inner receptacle s) 49 CFR 177.848C (Segregation table for hazardous materials) 49 CFR 178.500L Subchapter C (Segregation table for hazardous materials)		OS	HA IT
079C. HazMat transport - transportation of radioactive materials	49 CFR 100-199 and references			RP	IT HA
080A. HazMat transport - prolonged periods of driving / offsite	49 CFR 395 (Maximum driving and on-duty time)			OS	HA IT
080B. HazMat transport - prolonged periods of driving / onsite		49 CFR 395.3 (Maximum driving & on-duty time - not required onsite)		OS	HA IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
081C. Hazardous material transport - spills and chemical releases	CERCLA/SARA 42 USC 6901 et seq. 40 CFR 116 - 117 40 CFR 300 40 CFR 302 40 CFR 311 40 CFR 355 49 CFR 172 Subpart G 35 IAC Subchapter H, Subpart D 35 IAC 808- 809			EP	HA
082. Magnetic fields - bioelectric implants 083. Magnetic fields - fringe fields 084. Magnetic fields - high magnetic fields		ACGIH TLV for static magnetic fields		OS	HA
086. Material handling - chemical spills	29 CFR 1910.120 29 CFR 1910.1200 29 CFR 1910.176			OS	HA
087. Material handling - cranes and hoists	29 CFR 1910.179 (Overhead and gantry cranes) 29 CFR 1910.180 (Crawler locomotive and truck cranes)	ANSI B30.20 - 1990 (Overhead and gantry cranes) ANSI B30.5 - 1989 (Mobile and locomotive cranes)		OS	HA
088. Material handling - elevators used for hazardous material			Fermilab ES&H Manual chapter 5032.3, Transporting Gases in Building Elevators, has been written and in force for several years. It was written to specifically address the hazards associated with transporting cryogenic dewars and room temperature gas cylinders in Wilson Hall elevators and to minimize the potential risks.	OS	HA
089. Material handling - falling objects	29 CFR 1910 Subpart I (PPE) 29 CFR 1910 Subpart N (Materials Handling and Storage)			OS	HA
090. Material handling - forklift operation	29 CFR 1910.178			OS	HA
091. Material handling - hazardous tools equipment and machinery	29 CFR 1910.94 29 CFR 1910.106 29 CFR 1910.108 29 CFR 1910.215 29 CFR 1910.231 29 CFR 1910.242-244			OS	HA
092. Material handling - lifting objects	29 CFR 1910.184 (Slings)	ASME B30.20 - 1993 (Below the hook lifting devices) ANSI B30.9 - 1990 (Slings) ANSI B30.10 - 1993 (Hooks)		OS	HA
093. Material handling - moving objects	29 CFR 1910 Subpart N (Materials Handling and Storage)			OS	HA
094. Material handling - storage and handling of toxic materials.	29 CFR 1910.176 29 CFR 1910.1200			OS	HA
095A. Material handling - transportation / offsite	49 CFR 177.834 Subpart B 29 CFR 1910.176 29 CFR 1910.178			OS	HA IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
096. NIR - intense light sources	29 CFR 1910.133 29 CFR 1926.102 (Eye and face protection)			OS	HA
097. NIR - lasers	29 CFR 1926.54 (Nonionizing radiation) 29 CFR 1910.269(w)(8) (Electric power...)	ANSI Z136.1-1993 (Lasers)		OS	HA
098. NIR - radiofrequency radiation	29 CFR 1910.97 (Nonionizing radiation) 29 CFR 1926.54 (Nonionizing radiation) 29 CFR 1910.268(p) (Telecommunications) 29 CFR 1910.269(s) (Electric power...)	ACGIH TLV for radiofrequency/microwave radiation		OS	HA
099. NIR - ultraviolet light 149. Thermal - ultraviolet radiation / sun exposure	29 CFR 1910.133(a)(5) (Eye and face protection) 29 CFR 1910 Subpart I Appendix B (PPE) 29 CFR 1910.252(b) (Welding, cutting, brazing) 29 CFR 1926.102(b)(1) (Eye and face protection) 29 CFR 1926.353(d) (Ventilation and protection in welding, cutting, brazing)	ACGIH TLV for ultraviolet radiation		OS	HA
101. ODH - cryogenic gas or liquid leaks 102. ODH - cryogenic spills 103. ODH - gaseous argon or other detector gas 104. ODH - leak of supplied gas 085. Magnetic fields - quench effects			Fermilab ES&H Manual chapter 5064, Oxygen Deficiency Hazard, has been in force for over 15 years. It was developed to specifically address the ODH hazards at Fermilab and to minimize the potential risks.	OS	HA
105B. ODH - mechanical refrigeration systems		ASHRAE - 15 - 1989 or later version	Fermilab ES&H Manual Chapter 5035, Mechanical Refrigeration Systems, incorporates the above mentioned standard. This chapter effectively references the ASHRAE standard.	OS	IT
106. Other mechanical hazards - general environmental control	29 CFR 1910.94 29 CFR 1910.95 29 CFR 1910.96 29 CFR 1910.97 29 CFR 1926.50 29 CFR 1926.51 29 CFR 1910.52 29 CFR 1910.55 29 CFR 1926.56 29 CFR 1926.57 29 CFR 1926.59 29 CFR 1910 Subpart J			OS	HA
107. Other mechanical hazards - machine guarding	29 CFR 1910 Subpart O	ANSI B15.1 (Power transmission apparatus) ANSI O1.1 (Woodworking machinery) ANSI B11 series (Metalworking - applicable sections)		OS	HA

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
108. Other mechanical hazards - machinery and rotating parts	29 CFR 1910 Subpart F 29 CFR 1910 Subpart N 29 CFR 1910 Subpart O 29 CFR 1910 Subpart P	ANSI B11 series (Metalworking - applicable portions) ANSI B15.1 (Power transmission apparatus) ANSI O1.1 (Woodworking machinery)		OS	HA
109A. Other mechanical hazards - medical and first aid blood borne pathogens, lead, noise, asbestos, and respiratory protection	29 CFR 1910.151 (medical services and first aid) 29 CFR 1910.1030 (Blood borne pathogens) 29 CFR 1910.1025(j) (Lead) 29 CFR 1910.95(g) and (h) (Noise) 29 CFR 1910.1001 (Asbestos) 29 CFR 1910.134 (b)(10) (Respiratory protection)			OS	HA
109B. Surveillance - tuberculosis		II. Department of Public Health, DuPage County Dept. Public Health. CDC December 7, 1990		OS	HA IT
110. Other mechanical hazards - powered platforms	29 CFR 1910 Subpart F (Powered Platforms, Manlifts, and Vehicle Mounted Work Platforms)			OS	HA
111A. Other mechanical hazards - pressurized tanks and containers	29 CFR 1910.169 (Air receivers)	ASME Pressure Vessel Code - Section VIII	Fermilab ES&H Manual Chapter 5031, Pressure Vessels, has been written and in use for over 15 years. It has effectively minimized personnel exposure and equipment downtime from vessel failures.	OS	HA IT
111B. Other mechanical hazards - pressurized lines and piping systems	29 CFR 1910.169 (Air receivers)	ASME/ANSI B31.1 ASME/ANSI B31.3 ASME/ANSI B31.5 ASME/ANSI B31.8	Fermilab ES&H Manual Chapter 5031.1, Pressure Piping Systems, has been written and in use for over 15 years. It has effectively minimized personnel exposure and equipment downtime from piping failures.	OS	HA IT
112. Other mechanical hazards - material grinding, cutting, and drilling	29 CFR 1910.94 29 CFR 1910.212-213 29 CFR 1910.215 29 CFR 1910.243	ANSI O1.1 (Woodworking machinery) ANSI B11.8 (Drilling, milling, and boring machines) ANSI B11.9 (Grinding machines)		OS	HA

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
113. Other mechanical hazards (also fire) - means of egress	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 71 IAC - Illinois Accessibility Code Subparts C-F 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1926 Subpart F - Fire Protection and Prevention Uniform Federal Accessibility Standards, Chapter 4, Accessible Elements and Spaces: Scope and Technical Requirements	BOCA National Building Code BOCA Fire Prevention Code NFPA 101 & 101A current editions: Code for Safety to Life from Fire in Buildings and Structures		FP	HA
114. Other mechanical hazards - moving vehicles, carts, and forklifts	29 CFR 1910 Subpart N 29 CFR 1910 Subpart F			OS	HA
115. Other mechanical hazards - special hand tools and power driven nail guns, etc.	29 CFR 1910.243 29 CFR 1926.302			OS	HA
116. Other mechanical hazards - work with roads and grounds equipment	29 CFR 1910.132-133 29 CFR 1910.136 29 CFR 1910.212 29 CFR 1910.215 29 CFR 1910.241 29 CFR 1910.243-244 29 CFR 1928 Subpart C (Roll-over protective structures) 29 CFR 1928 Subpart D (Safety for agricultural equipment)			OS	HA
117. Other personal hazards - confined space	29 CFR 1910.146-147			OS	HA
119. Other personal hazards - hazards requiring PPE 126. Other personal hazards - sharp edges	29 CFR 1910 Subpart I 29 CFR 1926 Subpart E Other PPE requirements picked up in specific OSHA standards			OS	HA
120. Other personal hazards - high noise levels	29 CFR 1910.95			OS	HA
121. Other personnel hazards - housekeeping	29 CFR 1926.25 29 CFR 1910.22 29 CFR 1910.106 29 CFR 1910.176 29 CFR 1910.141			OS	HA
122. Other personnel hazards - ice/walking surfaces 127. Other personnel hazards - slips, trips & falls 131. Other personnel hazards - work on wet surface	29 CFR 1910.22 29 CFR 1926.25 29 CFR 1910.21 29 CFR 1910.23-30			OS	HA
123. Other personal hazards - lifting and carrying heavy objects			Fermilab ES&H Manual Chapter 5084, Ergonomic Protection, was prepared as a consequence of the N&S standards process. It formalizes the ongoing program of medical reviews, training, and work practice evaluations associated with this issue.	OS	HA
124. Other mechanical hazards - pinch points	29 CFR 1910 Subpart O 29 CFR 1910 Subpart P			OS	IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
				OS	HA
125. Other personal hazards - repetitive motion		ANSI Z365 (draft)	Fermilab ES&H Manual Chapter 5084, Ergonomic Protection, was prepared as a consequence of the N&S standards process. This standard is based on successful and cost-effective internal past practices (rather than the draft ANSI standard cited in #8).	OS	HA
129. Other personnel hazards - vacuum tanks			Fermilab ES&H Manual chapter 5033, Vacuum Vessel Safety, and a number of Fermilab Technical Memos have been written and in force for several years. These were written to specifically address the vacuum hazards at Fermilab and to minimize the potential risks.	OS	HA
130. Other personal hazards - vibration		ACGIH TLV for hand-arm segmental vibration		OS	HA
132. Other personnel hazards - working at heights	29 CFR 1926.104 29 CFR 1926.500-503 29 CFR 1910 Subpart D 29 CFR 1910.252(b)(1)(i)			OS	HA
133. Radiation - radioactive contamination 138. Radiation - radioactivated soil 141A. Radiation - residual contamination	10 CFR 835.603 10 CFR 835.404 10 CFR 835.1101 10 CFR 835 Appendix D			RP	HA
134/142. Radiation - special nuclear materials (SNM) and nuclear materials	Atomic Energy Act		Presently the Fermilab ES&H Section Specific Quality Implementation Plan (SQIP) RPS.8 constitutes an internal standard on nuclear material and special nuclear material based on DOE Orders 5633.3B, 5634.1B, 5632.1C, and 5660.1B. Upon approval of the N&S Set of standards, this internal standard will be improved to be consistent with management performance goals.	RP	HA IT
135. Radiation - mixed waste 140. Radiation - radioactive waste	WHC-EP-0063 Rev (or equivalent that might receive FNAL wastes) 40 CFR 260-270 35 IAC 700-730 (also see hazardous waste regs.)			RP	HA
136. Radiation - prompt radiation	10 CFR 835.501-502 10 CFR 835.601-603			RP	HA
137. Radiation - radioactive sources			Fermilab Radiological Control Manual Articles (FRCM) 365 and FRCM Chapter 4 Part 3 constitute an internal standard. These Fermilab policies are based on and are consistent with DOE N5400.9.	RP	HA IT
139. Radiation - radioactive liquids and gases	10 CFR 835.209 10 CFR 835.603 10 CFR 835.1101 10 CFR 835 Appendices A- C		Fermilab Radiological Control Manual Article 349 contains procedures needed to control radioactive liquids and gases in accelerator components. This constitutes an internal standard.	RP	HA

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
141B. Radiation - residual activity 143. Radiation - storage and handling of radioactive materials	10 CFR 835.601-603 10 CFR 835.501-502 10 CFR 835 Appendix B 10 CFR 835 Appendix C		Fermilab Radiological Control Manual Article 411. DOE has approved Fermilab criteria for the release of material which is determined to be nonradioactive. These criteria are needed to augment the cited regulatory requirements which do not embody such release criteria. It is presently incorporated into Article 411 of the Fermilab Radiological Control Manual and thus exists as an internal standard.	RP	HA
144. Thermal - battery bank and UPS equipment	29 CFR 1910.178(g)			OS	HA
145. Thermal - cold work environments		ACGIH TLV for cold stress		OS	HA
146. Thermal - cryogenics			Fermilab ES&H Manual chapters 5032 and 5032.1, Cryogenic System Review and Liquid Nitrogen Dewar Installation, respectively, are written and have been in force for several years. It was developed to specifically address the cryogenic hazards at Fermilab and to minimize the potential risks.	OS	HA
147. Thermal - high temperature equipment	29 CFR 1910.107(c)(3) 29 CFR 1910.303(b)(1)(iv) 29 CFR 1910.305(j)(4)(iii) 29 CFR 1910.307 29 CFR 1910.335(a)(2)(ii)			OS	HA
148. Thermal - hot work environments		ACGIH TLV for heat stress		OS	HA
152. Emergency preparedness - severe weather 029. Construction - high winds			Fermilab Emergency Plan Sections 35A, 35B, and 41. 1.) Personnel Warning - Severe weather -- Fermilab Emergency Plan, 9/92, Section 35A 2.) Shelters - Severe weather -- Fermilab Emergency Plan, 9/92, Section 35B 3.) Warning Signals - Severe weather -- Fermilab Emergency Plan, 9/92, Section 41	EM	HA IT
153. Emergency preparedness - safeguards and security	10 CFR 860 (Trespass to land owned & leased by the U.S. government.) 18 U.S. Code Sections 841-848 (Use, or threat of use, of explosives; includes civil disorders.) 10 CFR 1046 Subpt. B, App A, Chpt X, Paragraphs H through I inclusive (Physical protection of security interests, protective force personnel) Illinois Compiled Statutes (ICS) Chapter 625 (State vehicle code)			EM	IT
154. Emergency preparedness - generic	29 CFR 1910.38 Employee emergency plans and fire prevention plans. 40 CFR 300.150 (EPA) 40 CFR 311.1 Worker Protection E.O. 12356 of Aug. 1, 1982 (National security information - security training) Title 5 U.S.Code 4103 (Training - security) 28 CFR 36 Sections 4.1.3 (9) and 302(b)(2) (Americans with disabilities act - accommodations and accessibility)	NFPA 1561, Standard of Fire Dept. Incident Management System		EM	IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
155. Env - underground storage tanks	RCRA, 42 USC 6901 et seq. 40 CFR 280 35 IAC 731 - 732 35 IAC 170 35 IAC 170 Subpart A			EP	IT
156. Other mechanical hazards - aviation	14 CFR 91 (General operating and flight rules) SFAR 62 (Suspension of certain aircraft operations from the transponder...) 14 CFR 830 (Notification and reporting...accidents and incidents...) 14 CFR 135 (Taxi operators and commercial operators)			OS	IT
159. Emergency preparedness - hazardous materials	29 CFR 1910.120 (q)(2) Elements of an Emergency Response Plan Illinois Chemical Safety Act (as amended by P.A. 85-1325, effective August 31, 1988)			EM	IT
160. Emergency preparedness - toxicity in smoke or fumes	29 CFR 1910.38 (evacuation, accountability during emergency) 29 CFR 1910.120 (emergency response) 29 CFR 1910.134 (respirators) 29 CFR 1910.1000 Subpart Z (Protective Exposure Limits) 41 IAC			EM	IT
161. Env - general environmental protection planning	NEPA 42 USC 4321 et seq. 40 CFR 1500 - 1508 10 CFR 1021			EP	IT
163. Occupational safety administrative requirements	5(a)(1) of the OSH Act (General duty clause) 29 CFR 1903.2 (Posting of notice...) 29 CFR 1903.13 (Imminent danger) 29 CFR 1904 (Recordkeeping and reporting occupational injuries and illnesses) 29 CFR 1910.20 (Access to employee exposure and medical records) 29 CFR 1977.4 (Persons prohibited from discriminating) 29 CFR 1977.12 (Exercise of any right afforded by the Act)			MO	IT
164. Occurrence Reporting			Presently, Fermilab ES&H Manual Chapter 3050 constitutes an internal standard on occurrence reporting based upon DOE 5000.3B. This standard should be modified to define the areas for which occurrence reporting to DOE and to URA corporate headquarters will, in general, be done, once the ES&H N&S Standards set has been officially adopted for implementation. These areas include 1) when laws or regulations require reporting of incidents and occurrences outside the scope of normal operations, 2) when there is adverse public interest in an occurrence, 3) when a serious degradation in facility condition or personnel safety occurs, and 4) when the information is deemed to be, in the judgement of the Laboratory or the Contracting Officer, of significant value to other facilities in the DOE complex. Such reports will be provided to the Contracting Officer and shall be deemed to be sufficient.	MO	IT

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ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
165. Radiation - radiological emergency response (see 154.)	10 CFR 835.1301 10 CFR 835.1302 (covers records and dose limits for), for more see Emerg. Prep. 154			RP	IT
166. Radiation - radiological training	10 CFR 835.901-903			RP	IT
167. Radiation - monitoring and measurement of radiation	10 CFR 835.401-404 10 CFR 835.1101			RP	IT
168. Radiation - record keeping in occupational radiation protection	10 CFR 835.4 10 CFR 835.204 10 CFR 835.701-704 10 CFR 835.801 10 CFR 835.1101 10 CFR 835.1301 Privacy Act of 1974			RP	IT
169. Radiation - exposure control	10 CFR 835.101(c) 10 CFR 835.202-203 10 CFR 835.206-208 10 CFR 835.1001-1003 10 CFR 835.1302			RP	IT
170. Radiation - QA in occupational radiation protection	10 CFR 835.102			RP	IT
171. Safety analysis and documentation			Presently, Fermilab ES&H Manual Chapter 2010 constitutes an internal standard on safety analysis. Upon approval of the N&S Set of standards, this internal standard will be improved by considering DOE Order 5480.25.	MO	IT
172. Fire - emergency responder safety	29 CFR 1910.120 (emergency response) 29 CFR 1910.135 (occupational head protection) 29 CFR 1910.136 (occupational foot protection) 29 CFR 1910.156 (fire brigades) 41 IAC Illinois Health and Safety Act	NFPA National Fire Codes (NFPA standards list)		FP	IT

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